

## INTERNATIONAL SEARCH REPORT

In. International Application No  
PCT/US2004/013735

A. CLASSIFICATION OF SUBJECT MATTER  
IPC 7 H04L27/34 H04L27/38 H04L1/00 H04L25/06

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 H04L

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, INSPEC, PAJ

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category <sup>a</sup>	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	TARICCO G ET AL: "Some simple coded-modulation schemes for unequal error protection in satellite communications" SPREAD SPECTRUM TECHNIQUES AND APPLICATIONS PROCEEDINGS, 1996., IEEE 4TH INTERNATIONAL SYMPOSIUM ON MAINZ, GERMANY 22-25 SEPT. 1996, NEW YORK, NY, USA, IEEE, US, 22 September 1996 (1996-09-22), pages 1288-1294, XP010208825 ISBN: 0-7803-3567-8 Sections II and III figure 1	1-3, 5, 14, 15, 18, 19
Y	----- -/-	4, 6, 16, 17

Further documents are listed in the continuation of box C.

Patent family members are listed in annex.

<sup>a</sup> Special categories of cited documents :

- "A" document defining the general state of the art which is not considered to be of particular relevance
- "E" earlier document but published on or after the international filing date
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- "O" document referring to an oral disclosure, use, exhibition or other means
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"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

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Date of the actual completion of the international search

Date of mailing of the international search report

14 February 2005

17.03.05

Name and mailing address of the ISA

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International Application No

PCT/US2004/013735

## C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y ✓	DIVSALAR D ET AL: "Multiple turbo codes" MILITARY COMMUNICATIONS CONFERENCE, 1995. MILCOM '95, CONFERENCE RECORD, IEEE SAN DIEGO, CA, USA 5-8 NOV. 1995, NEW YORK, NY, USA, IEEE, US, 5 November 1995 (1995-11-05), pages 279-285, XP010153973 ISBN: 0-7803-2489-7 page 283, left-hand column, paragraph 1 Section IX	4,17
Y ✓	US 5 657 354 A (THESLING III WILLIAM H ET AL) 12 August 1997 (1997-08-12) column 3, line 58 - line 67	6,12,13, 16
A ✓	CALDERBANK A R: "Multilevel codes and multistage decoding" IEEE TRANSACTIONS ON COMMUNICATIONS, vol. 37, no. 3, March 1989 (1989-03), pages 222-229, XP002304039 Section III-A	1-6, 14-19
A ✓	KANNAN RAMCHANDRAN: "MULTIRESOLUTION BROADCAST FOR DIGITAL HDTV USING JOINT SOURCE/ CHANNEL CODING" IEEE JOURNAL ON SELECTED AREAS IN COMMUNICATIONS, IEEE INC. NEW YORK, US, vol. 11, no. 1, 1993, pages 6-22, XP000377993 ISSN: 0733-8716 figure 6b	1-6, 14-19
X	LIM J-H ET AL: "Labeling and decoding schemes for backward-compatible hierarchical coded modulation" 2000 IEEE WIRELESS COMMUNICATIONS AND NETWORKING CONFERENCE. CONFERENCE RECORD, vol. 1, 23 September 2000 (2000-09-23), pages 123-128, XP010532479	10,11
Y	page 123, right-hand column, paragraph 2 figure 3a	12,13
X	SCHILPP M ET AL: "Multilevel codes for digital HDTV" COMMUNICATION TECHNOLOGY PROCEEDINGS, 1996. ICCT'96., 1996 INTERNATIONAL CONFERENCE ON BEIJING, CHINA 5-7 MAY 1996, NEW YORK, NY, USA, IEEE, US, 5 May 1996 (1996-05-05), pages 771-776, XP010532925 ISBN: 0-7803-2916-3 figure 1b page 773, left-hand column, last paragraph sections II-A, II-B	10,11
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## INTERNATIONAL SEARCH REPORT

Int. J. Application No

PCT/US2004/013735

## C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	<p>SCHRAMM P: "Multilevel coding with independent decoding on levels for efficient communication on static and interleaved fading channels"          PERSONAL, INDOOR AND MOBILE RADIO COMMUNICATIONS, 1997. WAVES OF THE YEAR 2000. PIMRC '97., THE 8TH IEEE INTERNATIONAL SYMPOSIUM ON HELSINKI, FINLAND 1-4 SEPT. 1997, NEW YORK, NY, USA, IEEE, US, 1 September 1997 (1997-09-01), pages 1196-1200, XP010247636 ISBN: 0-7803-3871-5 figure 4</p> <p>-----</p> <p>PAPKE L ET AL: "Different iterative decoding algorithms for combined concatenated coding and multiresolution modulation"          COMMUNICATIONS, 1994. ICC '94, SUPERCOMM/ICC '94, CONFERENCE RECORD, 'SERVING HUMANITY THROUGH COMMUNICATIONS.' IEEE INTERNATIONAL CONFERENCE ON NEW ORLEANS, LA, USA 1-5 MAY 1994, NEW YORK, NY, USA, IEEE, 1 May 1994 (1994-05-01), pages 1249-1254, XP010126691 ISBN: 0-7803-1825-0 section 3.1</p> <p>-----</p> <p>US 5 983 174 A (WONG ET AL) →          9 November 1999 (1999-11-09)          column 1, line 20 - line 36          column 10, line 28 - column 11, line 25</p> <p>-----</p>	10-13
A		10-13
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## INTERNATIONAL SEARCH REPORT

Information on patent family members

Int'l Application No  
PCT/US2004/013735

Patent document cited in search report	Publication date	Patent family member(s)		Publication date
US 5657354	A 12-08-1997	NONE		
US 5983174	A 09-11-1999	AU 728399 B2 AU 7138996 A CA 2233980 A1 CN 1198861 A ,C DE 69634155 D1 EP 0853848 A1 WO 9714235 A1 JP 11513551 T NO 981525 A NZ 319215 A SG 92637 A1 US 6081778 A		11-01-2001 30-04-1997 17-04-1997 11-11-1998 10-02-2005 22-07-1998 17-04-1997 16-11-1999 03-06-1998 28-02-2000 19-11-2002 27-06-2000